

KATHMANDU UNIVERSITY
End Semester Examination
January/February, 2025

Level : B.Tech.
Year : IV
Time : 2 hrs. 30mins.

17 FEB 2025

Course : BIOT 409
Semester : I
F. M. : 55

SECTION "D"

[7 Q. × 5 = 35 marks]

1. Briefly discuss the potential therapeutic targets for HIV.
2. Elaborate on the promises and challenges of cytokine therapy.
3. Explain how precipitation assay can be used to find epitope similarities between antigens.
4. Discuss with an example how molecular mimicry can trigger autoimmunity.
5. Discuss any two methods of tissue typing.
6. Discuss *Erythroblastosis fetalis* as a type II hypersensitive reaction.
7. What are adjuvants? How do they work? Explain with examples.

SECTION "E"

8. **Give TWO** differences between *ANY FIVE* [5 Q × 2 = 10 marks]
 - a. Hashimoto's thyroiditis and Graves' disease
 - b. HIV infection and AIDS
 - c. Type I and Type IV hypersensitivity.
 - d. ELISA and Western blotting
 - e. Cytokine redundancy and Cytokine pleiotropy
 - f. Precipitation and Agglutination
9. **Explain WHY/HOW** for *ANY FIVE* [5 Q × 2 = 10 marks]
 - a. Non-specificity of cytokines reconcile with the specificity of our immune system.
 - b. Bone marrow transplantation can trigger graft vs. host reaction.
 - c. Though a promising technique, reverse vaccinology has its own limitations.
 - d. Multiple sclerosis is a systemic autoimmune disorder.
 - e. Not all vaccines can work through memory generation.
 - f. Removal of passenger leukocytes increases the chances of graft survival in host.

